

No additional fee is required for this Amendment as the number of independent claims is now three and the total number of claims is now twenty.

REMARKS

Applicant respectfully requests reconsideration of this Patent Application, particularly in view of the above Amendment and the following remarks.

Amendment to the Drawings

Applicant has amended Fig. 4 to show the cut-outs (in phantom) recited in Claims 6, 15, and 16. No new matter has been added to the drawings.

Amendment to the Substitute Specification

Applicant has amended the Substitute Specification at page 5, lines 3-7 to clarify that the described grooves are the cut-outs recited in Claims 6, 15, and 16.

Applicant has amended the Substitute Specification at page 6, line 17, through page 7, line 3, to clarify that the elements identified by the reference numbers 2, 2', 2'' and 2''' are the seats recited in the claims, and to describe the cut-outs added to Fig. 4. No new matter has been added to the Substitute Specification.

Amendment to the Abstract of the Disclosure

Applicant has amended the Abstract of the Disclosure to replace the phrase “said universal joints” with the phrase “the universal joints.”

Amendment to the Claims

Applicant has amended Claim 1 to further clarify the claimed invention and incorporate limitations from canceled Claim 4. Applicant has canceled Claims 4 and 11 as redundant in view of the amendment to Claim 1.

Applicant has amended Claims 2, 5, and 7 to further clarify the claimed invention and provide proper antecedent bases for claim limitations.

Applicant has amended Claim 8 to further clarify the claimed invention.

Applicant has amended Claims 12, 13, 15, 16, and 17 to further clarify the invention, provide proper antecedent bases for limitations, and correct claim dependencies in view of canceled claims.

No new matter has been added to the claims by this Amendment.

New Claims

Applicant has added new Claims 18-22. New Claims 18-22 are supported by Applicant’s drawings and Substitute Specification at page 6, line 16, through page 7, line 19.

Telephone Interview Summary

Applicant thanks the Examiner for his time and comments during a telephone interview with Applicant's attorney Mr. Mark D. Swanson on 10 March 2003. Mr. Swanson and the Examiner discussed the independent claims and the cited references. No agreement was reached.

Objection to the Drawings

The Examiner objected to the drawings as the claimed limitations "cut-outs" were not shown. Applicant has amended Fig. 4 as described above to show in phantom an embodiment of the claimed cut-outs. Applicant urges amended Fig. 4 overcomes the objection to the drawing. No new matter has been added.

Objection to the Specification

The Examiner objected to the Abstract of the Disclosure for containing the phrase "said universal joints." Applicant has amended the Abstract of the Disclosure to replace the word "said" with the word "the." Applicant urges the above Amendment overcomes the objection to the Specification.

Claim Rejections - 35 U.S.C. §103

Claims 1-17 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Gilberto, European Patent Publication EP 0 884 425 in view of Couse et al., U.S. Patent 2,882,564.

The Gilberto Publication discloses a collapsible bearing structure including tubular elements 4 connected together at articulation joints 2. (Abstract) The collapsible structure can be connected to another similar collapsible structure at the articulation joints 2 by a fixing means 9, 10 of the vertical telescopic elements 3b. (Column 3, lines 14-23). As shown in Fig. 2, element 9 of the fixing means at one end of a vertical telescopic element 3b is inserted into element 10 of the fixing means at the corresponding end of a second vertical telescopic element 3b. The fixing means 9, 10 is a screw means such that male element 9 screws into female element 10 to connect and hold two collapsible structures together through the articulation joints 2. (Column 3, lines 23-25).

The Couse et al. Patent discloses hinges for structural units, whereby two panels are joined by a hinge 20 positioned in grooves 31 in the panel members. (Column 3, lines 3-7, for example). The panels can be held in various hinged positions by variously shaped binder members, such as U-shaped binder member 44 having enlarged end portions which slide into an additional set of grooves for holding two abutting panels in an open, parallel hinged position. (Column 3, lines 15-22).

The Examiner alleges it would be obvious to one skilled in the art to modify the joints of the Gilberto Publication with the binder member 44 of the Couse et al. Patent to provide Applicant's claimed composite structure including two structures coupled at joints having grooves in a larger face and a C-sectioned fixing element having folded and inverted edges which cooperate with the grooves of two matched joints to hold the joints together. The asserted motivation for such combination being to ensure tight coupling of the structures of the Gilberto Publication and to provide an aesthetic cover for the joints of the structures of the Gilberto Publication.

Applicant respectfully disagrees with the Examiner that one skilled in the art would add the U-shaped binder member 44 of the Couse et al. Patent to the structure of the Gilberto Publication to ensure a tight coupling. As discussed above, the joints of the structure of the Gilberto Publication are held together by a screw fixing means of the telescopic element 3 through the joints. The disclosed screw-based fixing means would ensure a tight coupling between the joints, and an additional fixing means is not necessary and would only add additional materials and cost to the structure. Generally, Applicant's invention is a novel alternative means to secure the joints of a collapsible structure than that disclosed in the Gilberto Publication. As the Gilberto Publication discloses a screw-based fixing means that ensures tight coupling between the disclosed joints, one skilled in the art would not

be motivated to combine the binding member 44 of the Couse et al. Patent with the joints of the Gilberto Publication for ensuring a tight coupling.

The Examiner also alleges that one skilled in the art would be motivated to combine the U-shaped binding member 44 of the Couse et al. Patent with the joints of the Gilberto Publication as an aesthetically pleasing cover for the coupled joints. The collapsible structures of the Gilberto Publication are designed to support platforms and floor boarding. (Column 1, lines 3-5). At page 2, lines 3-6, of Applicant's Substitute Specification, the disclosed folding structures are described as useful as product displays or supports for raised loads, such as platforms, walkway bases, technical pavements, etc.

When used as platform supports, such as scaffolding, the aesthetics of the structure are not likely to be important. When used as a product display, aesthetics are more likely to be important, however, Applicant's C-sectioned fixing element covers only a small portion of the matched joints and leaves the remaining structure uncovered. Also, Applicant describes at page 5, lines 10-14, one preferred embodiment where the C-sectioned fixing elements are only used on the external surfaces of the matched joints to provide sufficient stability, thereby leaving the other sides of the joints uncovered and in view through the structure. If aesthetics are important and one desires to cover aspects of the structure, such as in product displays or staging, one would hide/cover the structure using, for instance, drapery or other

coverings. The U-shaped binding member 44 of the Couse et al. Patent would not provide sufficient cover of the structure of the Gilberto Publication such that one skilled in the art would find it obvious to combine these teachings for purposes of aesthetics.

In addition, neither the structure of Gilberto Publication nor the hinge and binding members of the Couse et al. Patent are disclosed as aesthetic enhancing elements. The elements the Examiner are combining are functional elements, and one skilled in the art would not find a suggestion or motivation in either reference to combine the teachings for purposes of aesthetics.

Therefore, Applicant's claimed composite structure including two structures coupled at joints having grooves in a face and a C-sectioned fixing element having folded and inverted edges which cooperate with the grooves of two matched joints to hold the joints together, would not be obvious to one skilled in the art reading the cited references. Claims 1-17 are thus patentable over the Gilberto Publication and the Couse et al. Patent, alone or in combination.

Claim Rejections - 35 U.S.C. §102

Claims 8 and 9 have been rejected under 35 U.S.C. §102(e) as anticipated by Jang, U.S. Patent 5,794,640.

Amended Claim 8 recites a universal joint comprising four hinging seats in a larger face and in correspondence with each side face. The larger face includes a groove proximate and parallel to the side edges of the larger face along each side face.

The Jang Patent discloses, in Figs. 7 and 8 for example, a mount 35 having four sockets 100 for insertion of connection members 200. (Column 4, lines 47-65). The socket 100 include a guide depression 101a in a sidewall 101 to allow connection member 200 to be easily inserted into bore 101b. (Column 5, lines 2-6).

The Jang Patent does not disclose or suggest Applicant's claimed groove that is proximate and *parallel to* the side edges of the larger face along each side face. Applicant's recited side face is the side in correspondence with a hinging seat, i.e., the hinging seat is open at the recited side face to receive the extended elements. The guide depression groove 101a of the Jang Patent extends in a surface, which is analogous to Applicant's larger face surface, perpendicular (not parallel) to the edge of the surface along the side face. In other words, the groove 101a of the Jang Patent extends in a direction from a side face towards the middle of the larger face, and thus perpendicular to the side face. In addition, the guide depression 101a of the Jang Patent is not adapted to coordinate with a folded and inverted edge of a C-sectioned fixing element, as required in Applicant's amended Claim 8.

Therefore, the Jang Patent does not teach each and every limitation of, and does not anticipate, Applicant's invention of amended Claim 8. Claim 9 depends from amended Claim 8 and is patentable for at least the same reasons as amended Claim 8.

Conclusion

Applicant intends to be fully responsive to the outstanding Office Action. If the Examiner detects any issue which the Examiner believes Applicant has not addressed in this response, Applicant's undersigned attorney requests a telephone interview with the Examiner.

Applicant sincerely believes that this Patent Application is now in condition for allowance and, thus, respectfully requests early allowance.

Respectfully submitted,



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Marked-up Version Showing Changes Made

In the Substitute Specification:

At page 5, lines 3-7.

The C-shaped springs with inverted edges cover a substantial portion of the corresponding side faces of the superimposed universal joints and they could provide for, in some cases, [grooves] cut-outs in correspondence with seats of lodgement of the extended elements and they could take different configurations depending on their use.

At page 6, line 17 - page 7, line 3.

With reference to Figs. 1 to 4, the universal joint 1 forms four [grooves] seats 2, 2', 2'' and 2''' on one of its larger faces in correspondence with each side face, that can accept hinged extended tubular elements, not shown in the figure. On larger face 3 of the universal joint that forms the four [grooves] seats (2, 2', 2'' and 2''') there is an opening 4 to fix the extremity of a tubular extended element 5 (shown in Fig. 4), within which another tubular element slides, not shown in the figure, and connected with a corresponding universal joint. The edges of the face of the universal joint form grooves 6 which constitute seats to accept one of the extremities 8 (shown in Figs. 2 and 3) of a spring 9 as shown in Fig. 4. In one embodiment of the

invention, as shown in Fig. 4, the spring 9 can include two cut-outs 12 (shown in phantom) that correspond to the seats (2, 2', 2'' and/or 2''').

In the Abstract of the Disclosure:

Composite structures obtained by joining two or more structures of the type which presents pairs of joined tubular elements, whose extremity is hinged in universal joints and in which the universal joints are substantially parallelepiped in form and present four seats of hinging corresponding to the sides faces, in which [said] the universal joints present grooves along the sides of the face, in which are scheduled the seats to hinge the extended elements, in proximity of the edges and parallel to the same edges, that cooperate with C-sectioned fixing elements to hold united two matched universal joints belonging to two structures from join.

In the Claims:

1. (Twice Amended) In a composite structure comprising at least two coupled structures comprising a plurality of pairs of scissors-connected tubular elements having extremities hinged in universal joints, said universal joints being integral delimited by substantially equal and parallel faces and forming four seats, each in correspondence with a side face to accept hinged elements, the improvement comprising: each of said universal joints [forming] including a groove along each side

of a larger face forming the four seats, said groove proximate to and parallel to a corresponding edge of each said side[, which] to cooperate with a folded and inverted edge of a C-sectioned fixing element having a dimension and a shape corresponding to two grooves of two matching said universal joints of the coupled structures to hold united said two matching said universal joints [from the two coupled structures].

2. (Twice Amended) A composite structure according to Claim 1, wherein the at least two coupled structures are superimposed and, in an inside surface of the larger face of the universal joint having said four seats, forming a fifth seat in which is fixed an extremity of an extendible telescopic tubular element whose other extremity is fixed to an opposed universal joint.

5. (Twice Amended) A composite structure according to Claim 1, wherein the C-sectioned fixing element is applied only [on] over each external side face of the universal joints that are on an external surface of the structure.

7. (Twice Amended) A composite structure according to Claim 1, wherein matching faces of the universal joints of the joined structures [forms] include at least one suitable perforation for housing [pivots that prevent] a pivot that prevents any horizontal movement [on a contact surface] of the universal joints.

8. (Twice Amended) [In a] A universal joint of substantially parallelepiped form [forming] comprising four hinging seats in [one of] a larger face and in correspondence with each side face, each of the seats suitable for fixing an extremity of an extended element, each side of the larger face [having said four hinging seats forming] including a groove proximate to and parallel to [a corresponding] an edge of each said side of the larger face, wherein the edge is along each said side face, the groove adapted to cooperate with a folded and inverted edge of a C-sectioned fixing element to unite two matched said universal joints.

12. (Amended) A composite structure according to Claim 10, wherein the C-sectioned fixing element is applied only [on] over each external side face of the universal joints that are on an external surface of the structure.

13. (Amended) A composite structure according to Claim [11] 2, wherein the C-sectioned fixing element is applied only [on] over each external side face of the universal joints that are on an external surface of the structure.

15. (Amended) A composite structure according to Claim [11] 2, wherein the C-sectioned fixing element covers a substantial portion of a

corresponding side face of superimposed universal joints and forms cut-outs corresponding to the seats for the hinged extended elements.

16. (Amended) A composite structure according to Claim 14, wherein matching faces of the universal joints of the joined structures [forms] include at least one suitable perforation for housing [pivots that prevent] a pivot that prevents any horizontal movement [on a contact surface] of the universal joints.

17. (Amended) A composite structure according to Claim 15, wherein matching faces of the universal joints of the joined structures [forms] include at least one suitable perforation for housing [pivots that prevent] a pivot that prevents any horizontal movement [on a contact surface] of the universal joints.